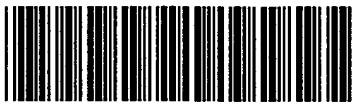

OIPE

RAW SEQUENCE LISTING DATE: 04/19/2002
PATENT APPLICATION: **US/10/076,900** TIME: 16:08:18

Input Set : **N:\Crf3\RULE60\10076900.raw**
Output Set: **N:\CRF3\04192002\J076900.raw**

SEQUENCE LISTING

(1) GENERAL INFORMATION:
(i) APPLICANT: Weiner, David B.
Wang, Bin
Ugen, Kenneth E.
(ii) TITLE OF INVENTION: Methods of Inducing Mucosal Immunity
(iii) NUMBER OF SEQUENCES: 40
(iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Woodcock Washburn Kurtz Mackiewicz & Norris
(B) STREET: One Liberty Place 46th Floor
(C) CITY: Philadelphia
(D) STATE: Pennsylvania
(E) COUNTRY: USA
(F) ZIP: 19103
(v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: WordPerfect 5.1

(vi) CURRENT APPLICATION DATA:
C--> **(A) APPLICATION NUMBER: US/10/076,900**
C--> **(B) FILING DATE: 14-Feb-2002**
(C) CLASSIFICATION:
(vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: 08/357,398
(B) FILING DATE:
(viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: DeLuca, Mark
(B) REGISTRATION NUMBER: 33,229
(C) REFERENCE/DOCKET NUMBER: UPAP-0114
(ix) TELECOMMUNICATION INFORMATION:
(A) TELEPHONE: 215-568-3100
(B) TELEFAX: 215-568-3429
(2) INFORMATION FOR SEQ ID NO: 1:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 32 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
W--> **(ii) MOLECULE TYPE: DNA**
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
AGGCGTCTCG AGACAGAGGA GAGCAAGAAA TG 32
(2) INFORMATION FOR SEQ ID NO: 2:

RAW SEQUENCE LISTING DATE: 04/19/2002
PATENT APPLICATION: **US/10/076,900** TIME: 16:08:18

Input Set : **N:\Crf3\RULE60\10076900.raw**
Output Set: **N:\CRF3\04192002\J076900.raw**

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
W--> **(ii) MOLECULE TYPE: DNA**
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
TTTCCCTCTA GATAAGCCAT CCAATCACAC 30
(2) INFORMATION FOR SEQ ID NO: 3:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 27 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
W--> **(ii) MOLECULE TYPE: DNA**
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
TTGTTTAACT TTTGATCGAT CCATTCC 27
(2) INFORMATION FOR SEQ ID NO: 4:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
W--> **(ii) MOLECULE TYPE: DNA**
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
GATTTGTATC GATGATCTGA C 21
(2) INFORMATION FOR SEQ ID NO: 5:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
W--> **(ii) MOLECULE TYPE: DNA**
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
TGTAGTAGCA AAAGAAATAG TTAAG 25
(2) INFORMATION FOR SEQ ID NO: 6:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
W--> **(ii) MOLECULE TYPE: DNA**
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
AATTCTTAAC TATTTCTTTT GCTAC 25
(2) INFORMATION FOR SEQ ID NO: 7:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 40 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single

RAW SEQUENCE LISTING DATE: 04/19/2002
PATENT APPLICATION: **US/10/076,900** TIME: 16:08:18

Input Set : **N:\Crf3\RULE60\10076900.raw**
Output Set: **N:\CRF3\04192002\J076900.raw**

```
     119           (D) TOPOLOGY: linear
W--> 120      (ii) MOLECULE TYPE: DNA
     121      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
     123 ATTTGTCGAC TGGTTTCAGC CTGCCATGGC AGGAAGAAGC                          40
     125 (2) INFORMATION FOR SEQ ID NO: 8:
     126       (i) SEQUENCE CHARACTERISTICS:
     127            (A) LENGTH: 29 base pairs
     128            (B) TYPE: nucleic acid
     129            (C) STRANDEDNESS: single
     130            (D) TOPOLOGY: linear
W--> 131      (ii) MOLECULE TYPE: DNA
     132      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
     134 ACGACGCGTA TTCTTTAGCT CCTGACTCC                                     29
     136 (2) INFORMATION FOR SEQ ID NO: 9:
     137       (i) SEQUENCE CHARACTERISTICS:
     138            (A) LENGTH: 24 base pairs
     139            (B) TYPE: nucleic acid
     140            (C) STRANDEDNESS: single
     141            (D) TOPOLOGY: linear
W--> 142      (ii) MOLECULE TYPE: DNA
     143      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
     145 GCTGACGGTA GCGGCCGCAC AATT                                          24
     147 (2) INFORMATION FOR SEQ ID NO: 10:
     148       (i) SEQUENCE CHARACTERISTICS:
     149            (A) LENGTH: 22 base pairs
     150            (B) TYPE: nucleic acid
     151            (C) STRANDEDNESS: single
     152            (D) TOPOLOGY: linear
W--> 153      (ii) MOLECULE TYPE: DNA
     154      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
     156 GTATTAAGCG GCCGCAATTG TT                                           22
     158 (2) INFORMATION FOR SEQ ID NO: 11:
     159       (i) SEQUENCE CHARACTERISTICS:
     160            (A) LENGTH: 78 base pairs
     161            (B) TYPE: nucleic acid
     162            (C) STRANDEDNESS: single
     163            (D) TOPOLOGY: linear
W--> 164      (ii) MOLECULE TYPE: DNA
     165      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
     167 AAAAAGCTTC GCGGATCCGC GTTGCGGCCG CAACCGGTCA CCGGCGACGC GTCGGTCGAC   60
     169 CGGTCATGGC TGGGCCCC                                                78
     171 (2) INFORMATION FOR SEQ ID NO: 12:
     172       (i) SEQUENCE CHARACTERISTICS:
     173            (A) LENGTH: 29 base pairs
     174            (B) TYPE: nucleic acid
     175            (C) STRANDEDNESS: single
     176            (D) TOPOLOGY: linear
W--> 177      (ii) MOLECULE TYPE: DNA
     178      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
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RAW SEQUENCE LISTING DATE: 04/19/2002
PATENT APPLICATION: **US/10/076,900** TIME: 16:08:18

Input Set : **N:\Crf3\RULE60\10076900.raw**
Output Set: **N:\CRF3\04192002\J076900.raw**

```
    180 CCCAAGCTTA GACATGATAA GATACATTG                                    29
    182 (2) INFORMATION FOR SEQ ID NO: 13:
    183      (i) SEQUENCE CHARACTERISTICS:
    184           (A) LENGTH: 22 base pairs
    185           (B) TYPE: nucleic acid
    186           (C) STRANDEDNESS: single
    187           (D) TOPOLOGY: linear
W--> 188      (ii) MOLECULE TYPE: DNA
    189      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
    191 CTAGCAGCTG GATCCCAGCT TC                                           22
    193 (2) INFORMATION FOR SEQ ID NO: 14:
    194      (i) SEQUENCE CHARACTERISTICS:
    195           (A) LENGTH: 24 base pairs
    196           (B) TYPE: nucleic acid
    197           (C) STRANDEDNESS: single
    198           (D) TOPOLOGY: linear
W--> 199      (ii) MOLECULE TYPE: DNA
    200      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
    202 GGATTTCTGG GGATCCAAGC TAGT                                         24
    204 (2) INFORMATION FOR SEQ ID NO: 15:
    205      (i) SEQUENCE CHARACTERISTICS:
    206           (A) LENGTH: 31 base pairs
    207           (B) TYPE: nucleic acid
    208           (C) STRANDEDNESS: single
    209           (D) TOPOLOGY: linear
W--> 210      (ii) MOLECULE TYPE: DNA
    211      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
    213 TATAGGATCC GCGCAATGAA AGACCCCACC T                                  31
    215 (2) INFORMATION FOR SEQ ID NO: 16:
    216      (i) SEQUENCE CHARACTERISTICS:
    217           (A) LENGTH: 31 base pairs
    218           (B) TYPE: nucleic acid
    219           (C) STRANDEDNESS: single
    220           (D) TOPOLOGY: linear
W--> 221      (ii) MOLECULE TYPE: DNA
    222      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
    224 ATATGGATCC GCAATGAAAG ACCCCCGCTG A                                  31
    226 (2) INFORMATION FOR SEQ ID NO: 17:
    227      (i) SEQUENCE CHARACTERISTICS:
    228           (A) LENGTH: 30 base pairs
    229           (B) TYPE: nucleic acid
    230           (C) STRANDEDNESS: single
    231           (D) TOPOLOGY: linear
W--> 232      (ii) MOLECULE TYPE: DNA
    233      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
    235 TAAAGCGGCC GCTCCTATGG CAGGAAGACG                                   30
    237 (2) INFORMATION FOR SEQ ID NO: 18:
    238      (i) SEQUENCE CHARACTERISTICS:
    239           (A) LENGTH: 34 base pairs
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RAW SEQUENCE LISTING DATE: 04/19/2002
PATENT APPLICATION: US/10/076,900 TIME: 16:08:18

Input Set : N:\Crf3\RULE60\10076900.raw
Output Set: N:\CRF3\04192002\J076900.raw

```
     240           (B) TYPE: nucleic acid
     241           (C) STRANDEDNESS: single
     242           (D) TOPOLOGY: linear
W--> 243      (ii) MOLECULE TYPE: DNA
     244      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:
     246 ATTACGCGTC TTATGCTTCT AGCCAGGCAC AATG                              34
     248 (2) INFORMATION FOR SEQ ID NO: 19:
     249       (i) SEQUENCE CHARACTERISTICS:
     250           (A) LENGTH: 40 base pairs
     251           (B) TYPE: nucleic acid
     252           (C) STRANDEDNESS: single
     253           (D) TOPOLOGY: linear
W--> 254      (ii) MOLECULE TYPE: DNA
     255      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:
     257 ATTACGCGTT TATTACAGAA TGGAAAACAG ATGGCAGGTG                        40
     259 (2) INFORMATION FOR SEQ ID NO: 20:
     260       (i) SEQUENCE CHARACTERISTICS:
     261           (A) LENGTH: 32 base pairs
     262           (B) TYPE: nucleic acid
     263           (C) STRANDEDNESS: single
     264           (D) TOPOLOGY: linear
W--> 265      (ii) MOLECULE TYPE: DNA
     266      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:
     268 ATTACGCGTT ATTGCAGAAT TCTTATTATG GC                                32
     270 (2) INFORMATION FOR SEQ ID NO: 21:
     271       (i) SEQUENCE CHARACTERISTICS:
     272           (A) LENGTH: 38 base pairs
     273           (B) TYPE: nucleic acid
     274           (C) STRANDEDNESS: single
     275           (D) TOPOLOGY: linear
W--> 276      (ii) MOLECULE TYPE: DNA
     277      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:
     279 GAGGCTTGGA GAGGATTATA GAAGTACTGC AAGAGCTG                          38
     281 (2) INFORMATION FOR SEQ ID NO: 22:
     282       (i) SEQUENCE CHARACTERISTICS:
     283           (A) LENGTH: 39 base pairs
     284           (B) TYPE: nucleic acid
     285           (C) STRANDEDNESS: single
     286           (D) TOPOLOGY: linear
W--> 287      (ii) MOLECULE TYPE: DNA
     288      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:
     290 GAATCCTCTC CAAGCCTCAG CTACTGCTAT AGCTGTGGC                         39
     292 (2) INFORMATION FOR SEQ ID NO: 23:
     293       (i) SEQUENCE CHARACTERISTICS:
     294           (A) LENGTH: 39 base pairs
     295           (B) TYPE: nucleic acid
     296           (C) STRANDEDNESS: single
     297           (D) TOPOLOGY: linear
W--> 298      (ii) MOLECULE TYPE: DNA
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VERIFICATION SUMMARY DATE: 04/19/2002
PATENT APPLICATION: **US/10/076,900** TIME: 16:08:19

Input Set : **N:\Crf3\RULE60\10076900.raw**
Output Set: **N:\CRF3\04192002\J076900.raw**

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L:29 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
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L:65 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=2
L:76 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=3
L:87 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=4
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L:109 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=6
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L:142 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=9
L:153 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=10
L:164 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=11
L:177 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=12
L:188 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=13
L:199 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=14
L:210 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=15
L:221 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=16
L:232 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=17
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L:254 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=19
L:265 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=20
L:276 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=21
L:287 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=22
L:298 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=23
L:309 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=24
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L:445 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=36
L:458 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=37
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L:482 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=39
L:493 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=40